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Indonesian Journal of Sport, Health and Physical Education Sciences Vol 3 No 1 (2024) https://doi.org/10.58723/inasport.v3i1.307
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Research Article

Comparison Of Motor Educability Ability Of Elementary School Students Based On Gender

Received : October 14, 2024	Revised : January 15, 2024	Accepted: January 28, 2025	Publish : January 30, 2025

Putri Sekar Kinanti*, Y. Touvan Juni Samodra, Rubiyatno

Abstract:
This study aims to determine the comparison of motor educability abilities of elementary school students based on gender. The research method used was a quantitative survey method with a sample of 51 students from grades 1 and 3 at Elementary School 17 Sungai Raya. Data collection was carried out through a test and measurement technique (IOWA Brace Test) which contained 21 test items. The data processing in this study was carried out with the help of excel and SPSS version 26 applications. The results of the study showed that there was a difference in motor educability between boys and girls in terms of age and grade level, this was because male students generally developed motor skills faster and better than female students, who tended to be slower in mastering motor skills. This research has the potential to improve understanding of the differences in motor ability, between boys and girls and provide suggestions for more comprehensive future research.

Keywords: Elementary School Students, Gender, IOWA Brace Test, Motor Educabilit

1. INTRODUCTION

Every child experiences the same pattern of growth and development, but at different levels, this is due to a number of factors. One of them is environmental factors that have a lot of impact on the abilities of boys and girls, this is because male students are given more opportunities to play than female students who are considered weak creatures and should not be given the freedom to explore the environment and nature because they are considered dangerous (Mardius et al., 2022). The effects of these factors can be temporary or even permanent according to how quickly and effectively the child develops. Motion education is essential in helping students develop the motor skills necessary to participate in a variety of physical activities and sports (Mustafa & Sugiharto, 2020). Basically, basic human motion is divided into three components, namely locomotor, non-locomotor, and manipulative motion.

Basic motor skills in early childhood are very important to learn, if children are not taught basic motor knowledge, then children will experience delays or difficulties in learning and performing new motor skills in the future (B. Syahrial, 2015). Early age for children is one of the determining factors in the process of growth and development in their life process. Early childhood is a sensitive period, during this period children can especially easily receive stimuli given or obtained from their environment. At an early age, children's motor skills can be improved with various stimulation models, through educational learning such as visual recordings. Providing stimulation is one of the efforts to support child development. Children who receive the right stimulation will be able to achieve various aspects of development optimally (Fitriani & Adawiyah, 2018).

With regard to gender, it is known that boys and girls experience the same order in the development of motor competencies. Based on physiological anatomy, men and women are two different things in terms of gender. Gender can affect the level of motor development (Bardid et al., 2017). However, some studies state that boys tend to be superior in gross motor skills, such as throwing, running, and catching that require greater physical strength. In contrast, girls haved in fine motor skills that involve more precise controls, such as balance and manual dexterity. Gender socialization taught in socialization has an important influence on the development of motor skills. In addition, individual differences also occur in the age range when children reach the developmental stage, whether faster or slower.

Movement skills are a person's ability to carry out various movements in a structured and efficient manner. This ability is very important for elementary school students because it will help each individual in carrying out daily activities and sports. In the period of early development, the improvement of motor skills is greatly influenced by the experience of learning movement and the conditions of the surrounding environment. Individuals with high motor educability are better than individuals with low motor educability, because individuals with high motor educability tend to be able to learn new motor skills more quickly and easily (Agam et al., 2016; Alibowo, 2016; D. Syahrial et al., 2020).

2. MATERIAL AND METHOD

This study uses a quantitative survey method. The sample used was all 1st and 3rd grade students of 17 Sungai Raya State Elementary School which amounted to 51 students, consisting of 31 boys and 20 girls. The data collection instrument uses the IOWA Brace Test, which consists of 21 test items to measure motor educability, such as balance, agility, and coordination. Each student is given two opportunities to take the test, and the assessment is based on the student's success in completing each test item. This research was carried out in three sessions for three days with the help of five expert assistants.

Table 1. IOWA Brace Test Research Instrument

1. *One Foot Touch Head*	12. *Full Squat – Arm Circle*
2. *Side Leaning Rest*	13. *Half Turn – Jump Left Foot*
3. *Grapespevine*	14. *Three Dips*
4. *One Knee Balance*	15. *Side Kick*
5. *Stork Stand*	16. *Knee – Jump to Feet*
6. *Double Head Click*	17. *Russian Dance*
7. *Cross – Leg Squat*	18. *Full Right Turn*
8. *Full Left Turn*	19. *The Top*
9. *One Knee – Head to Floor*	20. *Single Squat Balance*
10. *Hop Backward*	21. *Jump Foot*
11. *Forward Hand Kick*	

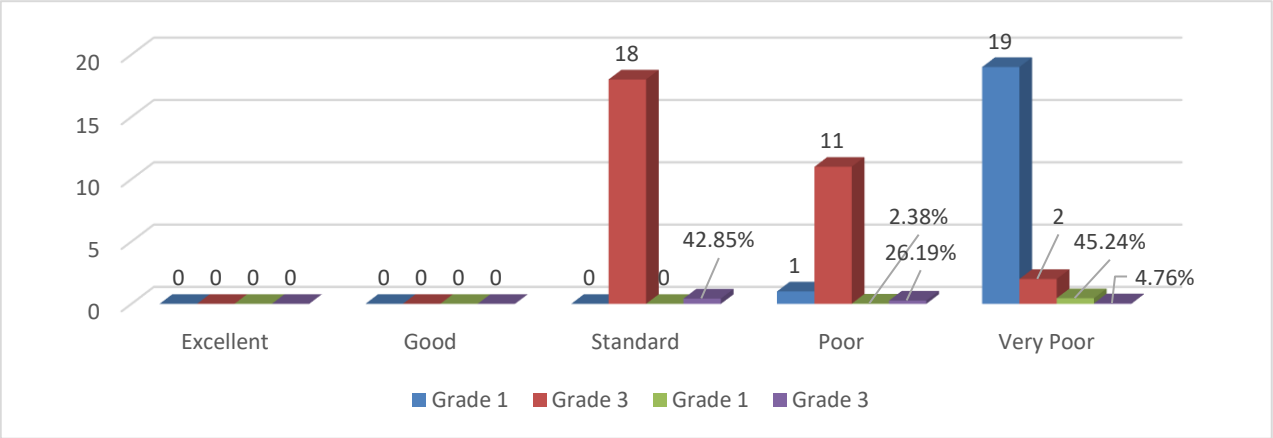
The test procedure involves the implementation of 21 types of tests, where each testee (student) will be given two opportunities to perform movements as many as 2x per item. Students are not allowed to practice, but are entitled to be given examples of each movement to be performed. The assessment of the movement will be carried out by calculating the score as follows: If the first movement is successful, then it will get a score (2), if on the first opportunity it fails and the second chance it succeeds, it will get a score (1), and if on two occasions it fails, it will not get a score (0).

3. RESULT AND DISCUSSION

This study showed variations in motor educability based on age, grade level and gender in grade 1 students and grade 3 students. The motor educability test was conducted in three sessions over three consecutive days. Each student was tested twice with a certain time interval. The assessment was based on the students' success in performing the movements contained in the *IOWA Brace Test.*

Table 2. Result Description Motor Education Grade 1 - 3

Status	Frequency		Percentage (%)	
	Grade 1	Grade 3	Grade 1	Grade 3
Excellent	0	0	0	0
Good	0	0	0	0
Standard	0	18	0	42,85%
Poor	1	11	2,38%	26,19%
Very Poor	19	2	45,24%	4,76%



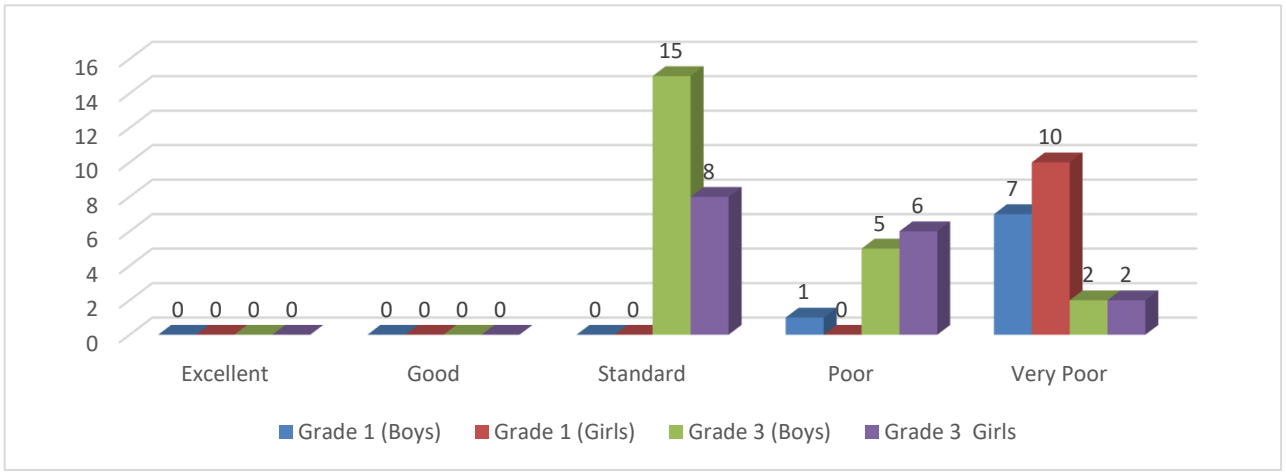
Graph 1. Result Motor Educability Grade 1 – 3

In grade 1, there were 19 students in the 'Very Poor' category with a score of 45.24%, while only 1 student was in the 'Poor' category with a score of 2.38%. There were no students in the moderate, good, or very good categories. These results indicate that grade 1 students still need a lot of practice and learning in terms of balance and coordination of movement. Meanwhile, of the 32 students in grade 3, it is known that there are 2 students in the 'Very Poor' category with a value of 4.76%, 11 students who are in the 'Less Good' category with a value of 26.19% and 18 students are in the 'Standard' category with a value of 42.85%. No students reached the good or excellent category, but these results show a significant improvement in motor educability compared to grade 1 students.

The results in table 1 show the motor educability ability of grade 1 students, which is in the 'Very Poor' category with a value of 45.24%. And the results in table 2 show the motor educability ability of grade 3 students, which is in the 'Standard' category with a value of 42.85%. Based on table 1 and graph 1 above, from 9 samples that ran 400 x3 x3, it is known that the First Set Pulse Rate with a mean result of 157.33 and the Second Set Pulse Rate is 166.00.

Table 3. Result Description Motor Education Grade 1 – 3

Status	Frequency			
	Grade 1 (Boys)	Grade 1 (Girls)	Grade 3 (Boys)	Grade (Girls)
Excellent	0	0	0	0
Good	0	0	0	0
Standard	0	0	15	8
Poor	1	0	5	6
Very Poor	7	10	2	2



Graph 2. Result Motor Educability Grade 1 – 3

Based on table 3 and graph 2, it can be concluded that there is a difference in the distribution of motor educability skills between boys and girls students in grades 1 and 3. In grade 1, most students are in the low category “Very Poor”, while in grade 3, there is an improvement in motor skills with many students in the "Standard" category.

Normality Test (T-Test – Independent Samples

Table 3. Descriptive Statistics Grade 1 and 3

Grade		N	Mean	Std. Deviation	Std. Error Mean
Result	Grade 1	20	13,900	3,9987	,8941
	Grade 3	31	23,484	3,1819	,5715

Based on table 3, it is known that the number of data on the results of motor educability of grade 1 students is 20 people with an average score (mean) of 13,900. Meanwhile, for grade 3 consisting of 31 people, they got an average score (mean) of 23,484. Descriptively, it can be concluded that there is an average difference in the results of motor educability between grade 1 and grade 3.

Tabel. 4 Independent Samples Test

Result	Levene's Test for Equality of Variances		T-Test For Equality Of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal Variances Assumed	,718	,401	-9,490	49	,000	-9,5839	1,0099	-11,6133	-7,5544
Equal Variances Not Assumed			-9,031	34,091	,000	-9,5839	1,0612	-11,7402	-7,4275

Based on table 4, it is known that the value of Sig. Levene's Test for Equality of Variances is 0.401 > 0.05, so it can be interpreted that the data variance between grade 1 and grade 3 is homogeneous or the same. Based on the Independent Samples Test table, a value of t = -9.490 with degrees of freedom (df) = 49 and a significance value (p-value) of 0.000 (p < 0.05) was obtained, which shows that there is a statistically significant difference between the average results of grade 1 and grade 3, where grade 3 has a higher average value than grade 1 with an average difference of 23.48 >13.90.

Based on the research results above, it can be concluded that there are significant differences in ability motor education between male and female students in grades 1 and 3. Grade 3 students showed significant improvements in terms of balance, agility, and motor coordination compared to grade 1 students. This is due to the development of age, grade level, and more intense interaction with the environment that supports motor development. In grade 1 students, the majority of students are still in the "Very Poor" category in terms of ability motor education. These results indicate that grade 1 students are still in the early stages of motor development, so they need more intensive stimulation and training to improve their motor skills. Meanwhile, grade 3 students showed better development, where most students were already in the "Standard" category. This shows that with increasing age, grade level and learning experience, students' motor skills develop better. Improved motor skills motor education from grade 1 to grade 3, can be caused by various factors, including better physical development, increased experience in physical activity, grade level, and the role of physical education in schools.

Early age is considered an ideal time to learn motor skills because at this stage, the child's body is still flexible and has not been influenced by other skills that can hinder the development of the motor skills being learned. This period is also known as the sensitive period, where children are specifically more receptive to stimuli from their environment, so

it is recommended that children at this age be active to maintain health and fitness for each individual. (Pradipta, 2017) stated that the golden age of children is a period where they are more sensitive to receiving various stimulations and educational efforts from their environment, both intentional and unintentional. added that early age is an important factor in determining a child's growth and development. Although biological age does not always determine skills, chronological age can affect motor skills. This is also influenced by the child's ability to understand and apply the movements taught (Asmonah, 2019). According to if elementary school children have optimal growth and development, they will be able to control and maintain body balance well. Therefore, parents and teachers need to understand the motor skills that children should have mastered, especially when they start school age.

Early childhood motor development is greatly influenced by the environment and social interactions. Physical activity during this period plays an important role in the development of brain nerve cells, as well as children's health and fitness. Improving basic motor skills, such as locomotor movements, can be done through traditional games. The importance of basic movement stimulation in early childhood is to support muscle development so that children can carry out activities well and optimally (Widiarti et al., 2021). Children who receive the right stimulation will be able to achieve various aspects of development optimally (Fitriani & Adawiyah, 2018). In addition to physical stimulation, visual media has also been shown to be effective in improving children's motor skills. The development of motor skills does not occur automatically, but rather through a process of learning and practice. Although motor development follows a similar general pattern in every child, individual differences, such as gender, still influence it.

The motor educability of boys and girls shows variation, with a tendency for boys to excel in gross motor skills such as running, jumping and throwing, while girls have advantages in some aspects of fine motor skills, such as tying shoelaces or using scissors with precision. This could be due to hormonal differences and physiological factors. Research shows that girls tend to start motor development sooner, especially in preschool age. But boys show greater improvements in strength and speed as they get older.

In terms of gender, boys tend to excel in gross motor skills, such as running and throwing, while girls excel in fine motor skills, such as balance and manual dexterity (Navarro-Patón et al., 2021). This difference is also influenced by the relationship between gender and the opportunities for play given to children. Male students are usually more physically active than female students (Figueroa & An, 2017). In addition, biological factors such as height and muscle strength also affect children's motor development (Berk, 2005). Other studies emphasize that biological and social factors work together to shape differences in motor skills between male and female genders (Toole & Kretzschmar, 2016).

Overall, motor educability plays a vital role in helping children develop new motor skills quickly and with quality. Motor development will continue to increase with age and grade level, and it is important for teachers and parents to provide equal opportunities for all children to participate in physical activities. This will ensure optimal motor development in every child, regardless of gender.

4. CONCLUSION

Based on the above results, this study shows that there is a significant difference in motor educability between boys and girls in grade 1 and grade 3. Grade 3 students have better motor skills compared to grade 1 students, especially in terms of balance, agility, and coordination of movements. Most of the girls in Grade 1 were in the ‘Very Poor’ category, indicating that the development of motor skills at a younger age was not optimal. However, by Grade 3, there was an improvement in motor skills, especially among boys who were more likely to be in the ‘Standard’ category. This suggests that the importance of movement learning opportunities and the utilisation of leisure time to improve students' motor skills from an early age.

5. ACKNOWLEDGEMENT

The researchers extend their sincere gratitude to all parties who have contributed to this study. Special thanks are given to the students and teachers of Elementary School 17 Sungai Raya for their active participation and full support throughout the data collection process. It is hoped that this research will contribute to the advancement of motor educability in the future.

AUTHOR INFORMATION

Corresponding Authors

Putri Sekar Kinanti, Universitas Tanjungpura, Indonesian
https://orcid.org/0009-0008-8945-1559
Email: putrsekark@student.untan.ac.id

Y. Touvan Juni Samodra, Universitas Tanjungpura, Indonesian
https://orcid.org/0000-0003-4850-1990
Email: tovan@fkip.untan.ac.id

Rubiyatno, Universitas Tanjungpura, Indonesian
https://orcid.org/0000-0001-7841-7955
Email: rubiyatno@fkip.untan.ac.id

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